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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
11/506,391	08/18/2006	Joon-Gon Son	AB-1893 US	7748

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EXAMINER

GRAMLING, SEAN P

ART UNIT	PAPER NUMBER
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2875

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11/27/2007

PAPER

Please find below and/or attached an Office communication concerning this application or proceeding.

The time period for reply, if any, is set in the attached communication.

Office Action Summary	Application No. 11/506,391	Applicant(s) SON ET AL.	
	Examiner Sean P. Gramling	Art Unit 2875	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 18 August 2006.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-24 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1-24 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 8/18/06 is/are: a) ☒ accepted or b) ☐ objected to by the Examiner.
 Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
 Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
 2. ☐ Certified copies of the priority documents have been received in Application No. _____.
 3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- | | |
|----------------------------------------------------------------------------------------|-------------------------------------------------------------------|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892) | 4) <input type="checkbox"/> Interview Summary (PTO-413) |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) | Paper No(s)/Mail Date. _____ |
| 3) <input checked="" type="checkbox"/> Information Disclosure Statement(s) (PTO/SB/08) | 5) <input type="checkbox"/> Notice of Informal Patent Application |
| Paper No(s)/Mail Date <u>8/18/06</u> | 6) <input type="checkbox"/> Other: _____ |

DETAILED ACTION

Claim Rejections - 35 USC § 102

1. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

2. **Claims 1-5, 9, 11, 16, 19 and 22** are rejected under 35 U.S.C. 102(b) as being anticipated by *Roberts* (US 4,950,059).
3. Regarding claim 1, *Roberts* discloses a backlight assembly 10 comprising a microwave generating member 30; a light-generating member (12, 28) generating light using the microwave; and a light-guiding member 14 connected to the light-generating member, the light-guiding member guiding the light generated from the light-generating member (see Figures 1-4, and column 3, lines 9-67).
4. Regarding claim 2, the microwave generating member 30 comprises a magnetron (see column 2, lines 43-45).
5. Regarding claim 3, the assembly further comprises a microwave transmitting member 32 connecting the microwave generating member to the light-generating member, the microwave transmitting member transmitting the microwave to the light-generating member (see Figure 2 and column 3, lines 67-68).
6. Regarding claim 4, the microwave transmitting member 32 comprises a waveguide (see column 3, lines 67-68).

7. Regarding claim 5, the light-generating member comprises a lamp 12 including a luminescent gas excited by the microwave to emit light; and a microwave resonance member 28 surrounding the lamp to resonate the microwave (see Figures 1-2 and column 3, lines 20-46 and 65-67).
8. Regarding claim 9, the light-guiding member 14 has a bar shape (see Figure 1).
9. Regarding claim 11, the light-guiding member 14 has a rectangular cross section (see Figure 1).
10. Regarding claim 19, the light-guiding member 14 has a plate shape (see Figure 1).
11. Regarding claim 16, the assembly can be comprised of a plurality of light-guiding members 14 (see column 3, lines 17-19).
12. Regarding claim 22, the microwave has a frequency of about 2GHz to about 10 GHz (see column 4, lines 30-31).

Claim Rejections - 35 USC § 103

13. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

14. **Claims 10, 14-15, 17-18 and 20-21** are rejected under 35 U.S.C. 103(a) as being unpatentable over *Roberts* (US 4,950,059).

15. Regarding claim 10, Roberts does not specify that the light-guiding member 14 be circular in cross section (see column 3, lines 17-19). However, it would have been obvious to one of ordinary skill in the art at the time the invention was made to form a circular light-guiding member since it has been held that lacking any criticality, changing the form or shape of prior art parts does not make the claimed invention patentable over that prior art (*In re Dailey*, 149 USPQ 47).

16. Regarding claims 14 and 20, although likely implied or inherent, Roberts does not specifically disclose that the light guiding member 14 have a hole or a plurality of holes at the incident surface that extend lengthwise. However, it would have been obvious to one of ordinary skill in the art at the time the invention was made to include holes at the incident surface and extending along the length of the light guiding member 14 in order to allow for transmission of the light throughout the entire member 14.

17. Regarding claim 15 and 21, Roberts does not specify a second light-generating member (12, 28) on an opposite end of the light-guiding member 14. However, it would have been obvious to one of ordinary skill in the art at the time the invention was made to provide a second light-generating member on the light-guiding member in order to increase the overall illumination through the light-guiding member, and since it has been held that mere duplication of the essential working parts of a device involves only routine skill in the art (*St. Regis Paper Co. v. Bemis Co.*, 193 USPQ 8).

18. Regarding claims 17 and 18, Roberts does not specify a plurality of light-generating members (28, 12) that all use the microwaves generated from the microwave generating member 30 and transmitted through a plurality of branches along

the microwave transmitting member 32. However, it would have been obvious to one of ordinary skill in the art at the time the invention was made to provide for a plurality of light-generating members (28,12) in order to increase the overall illumination of the device and to provide a plurality of branches along the microwave transmitting member 32 in order to carry the microwaves to the light-generating members, and since it has been held that mere duplication of the essential working parts of a device involves only routine skill in the art (*St. Regis Paper Co. v. Bemis Co.*, 193 USPQ 8).

19. **Claims 6-8** are rejected under 35 U.S.C. 103(a) as being unpatentable over *Roberts* (US 4,950,059), and further in view of *Dolan et al* (US 5,773,918).

20. Regarding claims 6-8, the light-generating member in *Roberts* further comprises a light-reflecting member 22 that partially surrounds the lamp envelope 16 and reflects the light emitted from the lamp toward the light-guiding member 14 (see Figure 1 and column 3, lines 28-43 and column 4, lines 45-49). Although the reflecting member 22 surrounds the lamp envelope instead of the microwave resonance member 28, it would have been obvious to one of ordinary skill in the art at the time the invention was made to position the reflecting member 22 over the microwave resonance member 28, since it has been held that lacking any criticality, the rearranging of parts of an invention involves only routine skill in the art (*In re Japikse*, 86 USPQ 70). Additionally, *Roberts* does not specify that the microwave resonance member 28 be comprised of metallic mesh. However, *Dolan* specifically teaches a metallic mesh microwave resonance member 6 (see *Dolan*, Figure 1 and column 4, lines 46-49). It would have been obvious to one of ordinary skill in the art to use a metallic mesh resonance member 28 in

Roberts when the light-reflecting member 22 is positioned around the member 28 in order to prevent transmission of the microwave energy while allowing for transmission of the visible radiation emitted from lamp 12.

21. **Claims 12 and 13** are rejected under 35 U.S.C. 103(a) as being unpatentable over *Roberts* (US 4,950,059), and further in view of *Kashima* (US 6,259,496).

22. Regarding claims 12 and 13, Roberts does not specify that the light-guiding member 14 include light diffusing beads or air bubbles. However, the use of diffusing beads and air bubbles within light guides is well-known in the art and is disclosed in *Kashima* (see column 5, line 66 through column 6, line 5). It would have been obvious to one of ordinary skill in the art at the time the invention was made to specify the inclusion of diffusing beads or air bubbles within the light-guiding member 14 in order to serve as a diffusing agents by refracting the entering light.

23. **Claims 23 and 24** are rejected under 35 U.S.C. 103(a) as being unpatentable over *Roberts* (US 4,950,059), and further in view of *Kim et al* (US 7,278,754).

24. Regarding claim 23, Roberts discloses a display device comprising a backlight assembly 10 including a light-generating unit (12, 14, 30) to generate light by using a microwave and a display panel (38,40) positioned over the backlight assembly, the display panel displaying an image by using the light generated from the light-generating unit (see Figure 1 and column 5, lines 1-22). Roberts does not disclose a receiving container having a bottom portion and a side portion for receiving the light-generating unit (12, 14, 30). However, Kim teaches a receiving container 3 having a bottom portion and a side portion for receiving a light-generating unit (see Figure 1 and column 2, lines

23-33). It would have been obvious to one of ordinary skill in the art at the time the invention was made to position the light-generating unit (12, 14,30) in Roberts within a receiving container as taught by Kim in order to adequately secure and protect the light-generating unit within the liquid crystal display device.

25. Regarding claim 24, the light-generating unit comprises a microwave generating member 30 generating a microwave; a light-generating member 12 generating light by using the microwave; and a light-guiding member 14 connected to the light-generating member 12 for guiding the light generated by the light-generating member (see Figures 1-4, and column 3, lines 9-67).

Conclusion

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Sean P. Gramling whose telephone number is (571) 272-9082. The examiner can normally be reached on MONDAY-FRIDAY 7:30 AM-5:00 PM.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Sandra O'Shea can be reached on (571) 272-2378. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.


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Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

S.P.G.

Sean P Gramling
Examiner
Art Unit 2875


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